Global changes

Floods, droughts, hurricanes, typhoons, cyclones, torrential rains and heatwaves have affected people throughout human history. But global warming has increased the frequency and severity of these extreme weather events in many parts of the world.

Global warming has also resulted in melting ice sheets, rising sea levels and increases in ocean temperatures. Warmer oceans have a significant impact on weather and climate patterns. Increased hurricane activity in North America has been linked to rising sea temperatures in the Atlantic Ocean.

CLIMATE RECORDS
Written weather records go back hundreds of years, but ice cores from 3,625 metres deep provide a 750,000-year climate history. Tree rings tell us about weather patterns back to 9,000 years ago. Scientists are still debating how changes in the sunspot cycle affect the Earth's climate.

Rising temperatures
By plotting the average global temperatures (red line on graph below) over the past 160 years, scientists can show that average temperatures have been rising steadily since the introduction of fossil fuels and engines.

Map of change
Meteorological stations based on land and satellites in space provide weather data, which can be mapped. With this global mapping, scientists can monitor any changes in weather patterns and assess the risks. They can then provide an early warning system.